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ABSTRACT

An Indiana project developed a model diagnostic basic skills testing program with statewide application for teachers certified under the Occupational Specialist Rules. Fifteen commercially produced tests were reviewed for adoption. The set of criteria that guided the selection process included technical aspects and application factors. The TABE instrument and system were field tested in Spring 1990 with a sample of first-year vocational education teachers certified at the Occupational Specialist I level. The sample included 26 teachers at 3 sites. The appropriateness of the test and the utility of the information were substantiated. A cost study suggested that the Basic Skills Testing Program was relatively inexpensive. (Appendixes include a list of project personnel, description of TABE, field test data, and cost study data.) (YLB)

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FINAL REPORT

Professional Development for Occupational Specialist: Diagnostic Basic Skills Testing

March 14, 1989 to June 30, 1990

Project # 88-4741

Dr. Robert C. Harris
Project Director

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
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Final Report Abstract

I. Eligible Recipient: Indiana University

II. Project Title: Professional Development for Occupational Specialist: Diagnostic Basic Skills Testing

III. Project Number: 88-4741

IV. Description

A. Completed Project Objectives

The intent of the project was to develop a model diagnostic basic skills testing program with statewide application for teachers certified under the Occupational Specialist Rules.

B. Action Steps Completed

The major action steps included (a) selection of a commercial test, (b) development of a test administration system, (c) development of test security procedures and central coordination plan, (d) development of standards for use in interpreting the information, (e) field testing the system, (f) completion of a cost study, and (g) development of products.

C. Outcomes

A comprehensive statewide testing service was developed which adopted the Test of Adult Basic Education (TABE), Level D, Survey Form as the assessment instrument. System will make use of a policy handbook, technical report, and test manual. The proposed system was estimated to cost $4,195.90 during the initial implementation year. A limited retest option would also be available at $537.80.

D. Evaluation/Recommendations

The project met the required objective and the field test results support the viability of the proposed system.

FINAL REPORT

Professional Development for Occupational Specialist:
Diagnostic Basic Skills Testing
Project

This final report provides information on the Diagnostic Basic Skills Testing Project which was conducted from March 14, 1989 to June 30, 1990. The project conducted by Indiana University was funded by the Indiana Department of Education (IDOE) with funds from the Carl D. Perkins Vocational Education Act.

Statement of Objective

The intent of the project was to develop a model diagnostic basic skills testing program with statewide application for teachers certified under the Occupational Specialist Rules.

Statement of the Problem

In June 1989 Governor Evan Bayh signed into law new rules adopted by the Indiana State Board of Education affecting the certification of vocational education teachers. Specifically, teachers employed to teach vocational programs who do hold the "standard license" are certified as Occupational Specialists. There are three classifications, OSI, OSII and OSIII based on the entry requirements the individual has met.

Occupational specialist certified teachers are required to meet several requirements to maintain their certification. This is especially true of persons qualified under the rules affecting the OSI Certificate. Among the five first year requirements is the completion of a basic skills test.

The new rules' basic skills testing requirement, to be implemented in the 1991-92 school year, mandates the creation of a basic skills testing

program to accommodate the certification requirement. An initiative to create this system was framed by an RFP issued by the Indiana Department of Education. This project's mission was to recommend to the IDOE a basic skills testing system for the Occupational Specialist Program.

Processes

The proposal contained a management plan which brought together essential people for the study task. Cornerstones of this plan included project staff, testing consultants, and field personnel represented by a partnership with the Indiana Association of Area Vocational Districts, Inc. In addition, an advisory committee reviewed key project activities and concepts. A list of persons involved in the project is provided in Appendix A.

The management plan laid out a tentative road map of essential tasks. While some adjustments were made in the proposed tasks, these key tasks proved to be critical to completing the recommended system (see Appendix B).

Outcomes

This section will provide a very brief but essential overview of the recommended system.

The planning effort was conceived around a set of assumptions either implied within the new rules or given within the RFP. These six assumptions were critical to framing the basic skills testing system:

- o The new rules emphasis a close partnership between university personnel, vocational administrators, and IDOE staff. The proposed system had to compliment this partnership.
- o Grounding in the basic skills is essential for vocational education teachers. These skills include facility with mathematics, reading and communication (writing).

- o Basic skills were interpreted to be general functioning, not occupationally specific functioning (e.g., general mathematics, not mathematic used in a specific occupation).
- o The testing program was to be used for professional development planning, not the screening and selection of teaching position applicants. This assumption not only had implications for the type of test but for its interpretation.
- o The system had to be simple, inexpensive, efficient and reliable. There had to be clear lines of responsibility.
- o The system had to attend to human needs by reducing anxiety and increasing the information's utility to the teacher. Additionally, the system had to transfer a minimum cost and inconvenience to the examinees.

Test Selection. Given the assumptions, it was immediately clear adoption of a commercial produced test was the only reasonable option. Therefore, a set of criteria was applied to guide the selection process. The criteria included technical aspects (e.g., validity, reliability, norm groups, time, test administration standards, etc.) and application factors (e.g., item content, item format, difficulty, commonality to the examinees' experiences, etc.).

Fifteen commercially produced tests were reviewed. From the six in the final screening, the Test of Adult Basic Education (TABE) was the clear choice among staff and advisory personnel. A brief description of the TABE appears in Appendix C. The test provides raw scores on the three primary areas (i.e., mathematics, reading and communication), and grade equivalents.

Testing System. The TABE, unlike several tests, allows for persons with limited test administration training to conduct the testing process. The materials (i.e., test booklets, answer sheet, and test manual) are well conceived and clearly developed. These factors allowed greater flexibility for administering the test. From among five options a single cost

effective method is recommended. The field test of this system proved to be effective in all detail including efficiency and comfort for the examinees. Key features include:

- o The administration of all tests within a one week period at multiple sites. The testing should occur during March for the greatest efficiency. March provides sufficient lead time for the PDP planning process.

- o Integration of the testing program within the forty-five clock hour seminar (e.g., addition of an evening meeting that does not exceed three hours). Integration means conducting the testing at the training site and by the examinees' teacher trainer. It does not mean including the testing program as part of the forty-five hour instructional program.

- o Guidelines for the testing environment and very specific instruction for administering the test are included in the TABE manual. The instructions were edited to appeal to a more sophisticated group or examinees.

- o The Scoreze Answer Sheet was selected. This form can be hand scored in less than one minute and it has the advantage of providing on-site feedback to the examinees which greatly reduced their test anxiety and increased their interest in taking the test.

- o A central record system for verifying scores, producing examinees' profiles, and building a norm for the vocational education teacher population is required. Site test materials should be recorded and mailed to the central office for processing and storage.

Test Interpretation. The staff and advisory committee agreed with the information format and key interpretation assumptions. The fundamental assumption concerned how the information was to be used; that is, for planning not selection or screening. Several implications of this assumption are briefly highlighted below.

- o Test Difficulty. What achievement level was critical? How difficult should the test be? At what level should the test be most sensitive? These are a few of the questions relative to interpretation that drove the test selection process.

- o Type of Information. Since planning was to be the purpose of the test results, what form of outcome measures should be provided?

- o Privacy. Test information was to be for the private use of the teacher (examinee) and her/his professional development planning committee.

- o Standards. What standards should be applied to the interpretation of the information? How will this information be translated into recommendations and actions?

Decisions on these questions and concerns provided the key feature for test interpretation within the system. This system is unique to Indiana's use of the TABE. It makes use of TABE normative data without violating any of the TABE assumptions or norms.

The TABE Level D (difficult) was selected as best meeting the state testing needs. This instrument in survey form provided for a range of achievement from Grades 2.6 to Grade 12.9. However, the difficult form is most sensitive to the grade range 6.6 to 8.9.

Each major test includes two subtests. The individual subtest and their combination provide critical information. The TABE norm tables distributes all raw scores in a matrix for each major test (i.e., mathematics, reading, communication [see Appendix D]).

The system's interpretation standard was developed for planning purposes. The standard involves three levels: High: no additional education/training needed, Marginal: additional education/training might be considered, and Low: additional education/training is essential. The later category should obligate the PDP Committee to include future study in the basic skills during the first renewal period (teaching years 2-5). An option available to teachers in the "low" category is retesting on a more comprehensive test (TABE: Standard Form). This option would verify the

results and, if necessary, provide more indepth information about the limiting factors in the teacher's achievement. The middle category points up a modest performance concern; but this classification should encourage the committee to weigh all factors meriting further education and training. The raw score matrix for each test is depicted in Appendix F.

The critical cut-off point between the lower level of the "marginal" category and "low" is 8.0 grade level. The higher cut-off point of the marginal category is 11.9. That means the high category includes only persons scoring at the equivalent of 12 grade or higher while the low category includes persons below an eight grade equivalence. Two points of clarification are needed at this point in the discussion:

- The grade equivalents are based on norms for a non-college population that did not include vocational teachers.
- The grade equivalent information is for staff of the funding agency only. This type of information will not be provided to the PDP Committees nor is it for public use.

Finally, the verified raw score information and interpretation matrices would be sent to all members of a teacher's PDP Committee. This information must be held in strictest confidence by each committee member. Only coded (non-decodeable) information would be retained in a central file. This information, accumulated over several years, could become the basis for generating revised state norms on our vocational teacher population. State norms are necessary since the TABE norm population are dissimilar to vocational teachers.

Field Test. The TABE instrument and system were field tested in Spring, 1990 with a sample of first year vocational education teachers certified at the OSI level. A sample was necessary since voluntary participation was the only option available.

The sample included an N = 26 from a population of N = 39 or sixty-seven percent (67%) of the 1989-90 first year OSI teachers. However, the sample was a census of teachers at three sites. Therefore, one might have greater confidence in the sample as a complete cross section of the population.

Several tables appear in Appendix F which provide data on the performance of the sample on each subtest. But of course, two subtests must be combined for each basic skill area on an individual basis.

Provided in Table 1 is a tabulation of the number of teachers by their performance on each basic skill area. The data are reported by the three interpretation categories. Seventy-four percent (74%) of the teachers scored in the high category, twenty-one percent (21%) marginal category, and five percent (5%) in the low category for the total test. As a group, the strongest performance was in reading and the most limited in language.

Table 1

First Year Non-Degreed Vocational Teachers' Performance on the TABE Survey Instrument, Level D (N = 26)

	Reading		Math		Language	
	N	%	N	%	N	%
High	20	77	17	65	21	81
Marginal	6	23	8	31	2	8
Low	0	0	1	4	3	11
	26	100	26	100	26	100

Financial Study. The proposed basic skills testing system will be a low cost program to operate. It has been designed for compatibility with

existing state support services for new vocational education teachers. Additionally, it has been designed to provide (1) limited inconvenience to the teacher, (2) reduction of anxiety, (3) coordination with the PDP process, (4) trained test administrators, and (5) a minimum coordination effort.

The total basic system's operation should not exceed $4,195.90 for the first year of operation. See the table on the next page and Appendix G.

Table 2

Cost Study: A Typical Operational Year Based on the Optimal Number of Sites and Fifty Examinees

Basic System	$4,195.90
Basic system includes administration of the TABE, Survey Form, Level D using Scoreze Answer Forms. The survey would be administered at ten sites across the state. The full services would include test administration, coordination services, examiner training/briefing, scoring, information dissemination, security of test storage, and other services related to the Basic Skills Testing Program. This study assumes an examinee population of 50.	
Advanced Testing Option	$ 537.80
The advanced testing option (not required) would compliment the basic system by providing more indepth testing of persons in the "low" classification. The option, administered at one site as a follow-up to the initial program, would provide more information about a person's relative strengths and limitations. All of the above services would be included. The option assumes a 20% retest of the initial population.	
TOTAL SYSTEM	$4,733.70

*) Refer to Appendix for an itemization of all costs.

Additionally, an advanced testing option might be considered. This cost study assumes:

- o optimal number of sites (10),
- o examinees (50),
- o regional examiners (4),
- o coordination services, and
- o minimum travel.

Given the level of personnel involvement, it is recommended that examiners and the coordination services be provided on a contracted basis with individuals through the forty-five clock hour contract. This plan will reduce the services cost substantially over a "release percent of time" basis. For example, if only five percent (5%) of a typical examiner's time was purchased it would cost an average of $2,000.

Affiliating the services with the training program involves all of the personnel designed into the system and provides a fiscal agent for administering the budget.

Conclusion and Recommendations

A comprehensive statewide system for attending to the mandated Basic Skills Testing Program has been developed. The system is orchestrated with the certification and training services of the state through the Indiana Department of Education.

The system makes use of a highly respected commercially produced assessment instrument. The information is presented to the Professional Development Planning Committee in usable form. Field testing of the system has substantiated the appropriateness of the test and the utility of the information.

The cost study suggests the Basic Skills Testing Program is relatively inexpensive. It is recommended that the system be adopted and funded by

the Indiana Department of Education. Further, it is recommended the new system be coordinated/administered through the Personal Service Contract for training service with a fiscal agent to be determined by the Consortium. This Consortium includes Ball State University, Indiana State University, Indiana University, and Purdue University, and vocational teacher educators from these institutions will serve on the PDP Committees.

APPENDICES

Appendix A

Project Personnel

Indiana Department of Education

The Indiana Department of Education funded the project. The Department's representative to the project and its technical specialist on vocational teacher certification advised the project staff and monitored the project's efforts.

Dr. Jim Nitsos
Education Consultant in Teacher Certification
Center for Professional Development
Indiana Department of Education

Advisory Committee

The project's Advisory Committee was composed of experts drawn from varied positions in education, business, and industry. The committee's role was to advise the project staff about operational approaches, issues, and technical considerations.

Ms. Becky Appelman
Vocational Teacher
Hoosier Hills Area Vocational School

Mr. Nick Banos, Jr.
Director
Central Nine Vocational-Technical School

Mr. Ric Burdine
Vocational Teacher
Ben Davis High School

Dr. Max Eddy
Professor
Purdue University

Dr. Robert C. Harris, Chair
Associate Professor
Indiana University

Mrs. Nina Kelsey
Special Assistant to the Chairman and CEO
Ball Corporation

Mr. David Kemp
Vocational Teacher
Indiana Women's Prison

Dr. Nancy Moller
Superintendent
Adams Central Community School

Mr. Steve Van Treese
Director of Technical Training
AMTRACK

Project Staff

The project staff was composed of specialists with backgrounds in education and basic skills testing. The staff were affiliated with Indiana University and the Indiana Association of Area Vocational Directors.

Dr. Robert C. Harris
Project Director and Associate Professor
Occupational and Technical Programs
Indiana University

Mr. Jim Hixson
Associate Project Director
Former Vocational Director
Indiana Association of Area Vocational Districts, Inc.

Ms. Shannon Hawkins
Project Coordinator
Diagnostic Basic Skills Testing Project
Indiana University

Dr. Clinton Chase
Assessment Specialist
School of Education
Indiana University

Dr. Lucy Jacobs
Systems Specialist
Director, Bureau of Evaluative Studies and Testing
Indiana University

Ms. Sarah Cassell
Writer and Instructional Design Specialist
Department of Curriculum and Teacher Education
Indiana University

Ms. Cathy M. Hawkins
Evaluator
School of Education
Indiana University

Ms. Beverly Hankenhoff
Reviewer
Vocational Director
Indiana Association of Area Vocational Districts, Inc.

Mrs. Diana Dicus
Information Specialist
Occupational and Technical Programs
Indiana University

Mrs. Joni Colyer
Clerical
Department of Curriculum and Teacher Education
Indiana University

Appendix B

Major Tasks of the Project's Operation

Task A - Conducted planning and advisory committee meetings

Task B - Established criteria for test selection

Task C - Identified tests

Task D - Reviewed tests

Task E - Developed maintenance, access, and coordination component

Task F - Developed test administration guidelines and procedures

Task G - Revised test administration manual

Task H - Developed test scoring and analysis capacity

Task I - Pilot tested at selected sites

Task J - Selected the diagnostic basic skills instrument

Task K - Established interpretation standards

Task L - Purchased all diagnostic basic skills test material

Task M - Developed interpretation forms

Task N - Reviewed proposed system and standards

Task O - Evaluated the model system

Task P - Revised the model

Task Q - Conducted a cost analysis

Task R - Conducted third party evaluation

Task S - Wrote reports and materials

Appendix C

Description of the TABE Instrument

TABE

Tests of Adult Basic Education, Forms 5 and 6 ©1987

The *Tests of Adult Basic Education* (TABE) is the nation's most widely used test for adult basic education. TABE is the most reliable measure designed to assess reading, mathematics, and language skills for adults, continuing a long history of technical excellence. And TABE is the only basic skills test in which all items were normed on adults.

BENEFITS

- Language and content are appropriate for adults.
- Tests measure basic skill competencies required to function in modern society. Surveys of curricular materials most used in ABE and GED programs were the basis for development of TABE specifications. TABE measures what is being taught.
- Four levels – E (Easy), M (Medium), D (Difficult), and A (Advanced) – insure a positive testing experience.
- Objectives mastery scores are available for all levels of reading, language, and mathematics for skills usually learned at Grades 2-12. These scores allow individualized instruction appropriate for each examinee.
- Separate Locator Tests for reading and mathematics help place the examinee in the appropriate level of each area.
- Quick, reliable testing, using the Survey Form, provides total reading, mathematics, and language scores when specific objectives mastery information is not needed and testing time is limited.
- Machine-scoring by microcomputers and tabletop scanners is possible through the use of TABE software.
- Grade Equivalent scores are provided through a link with the *California Achievement Tests*, Form E (CAT E).
- Reference group norms are available for categories of adult students who most commonly use TABE: ABE-GED students, vocational-technical school students, youthful offenders, and adult offenders.
- Predicting General Educational Development (GED) scores on each of the five tests and the average is possible based on various TABE scores.
- Scales are equated to Forms 3 and 4 of TABE-1976 for continuity of data.
- The popular SCOREZE Answer Sheet makes hand scoring simple and speedy.
- Application of a three-parameter Item Response Theory in the developmental stages increases the accuracy of measurement. All items passed rigorous statistical standards to meet the requirements of least bias for ethnic and gender groups and the highest parameters for measurement.
- All items and passages were reviewed for ethnic and gender bias by outstanding members of the adult education community, who are also members of the group for which they reviewed.
- You can use *BLS Adult Education Tutorprograms* (BLS) booklets to teach skills that TABE identified as deficient. A list comparing TABE objectives with BLS units is provided in the BLS manual.

DESCRIPTION

TABE comprises four grade levels:

Level E	Grades 2.6 through 4.9
Level M	Grades 4.6 through 6.9
Level D	Grades 6.6 through 8.9
Level A	Grades 8.6 through 12.9

In addition to the above levels for the Complete Battery tests, four similar levels of the Survey Form are available for screening purposes. Each level provides scores both above and below the ranges listed.

A Practice Exercise and Locator Test is recommended for administration prior to testing with TABE when little is known about a person's level of ability yet reliable measurement of skills is desired. The Locator Test prevents measuring with a test where a person "tops out" or "bottoms out" so that the best profiling can be done. Also, the Practice Exercise and Locator Test provides a person with practice in test taking and helps reduce apprehension. Separate Locator Tests are provided for reading and mathematics, because it has become evident that many adults have differing levels of skills in each area. Answers may be recorded on a **Hand-Scorable Answer Sheet** and scored with an acetate **Hand Scoring Stencil** or on the self scoring

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SCOREZE Answer Sheet. Directions for administering and scoring the Practice Exercise and Locator Test are included in both the Survey Form and the Complete Battery Examiner's Manuals.

The content of the tests at each level is based on analysis of instructional materials available at various grade levels in adult education classes. The content of the items is carefully planned to be appropriate for adults even at the lowest levels of the test.

The **Reading Vocabulary** tests measure same-meaning and opposite-meaning words, words in context, multi-meaning words, and word affixes. The **Reading Comprehension** tests measure skills in understanding passage details, character analysis, main ideas, generalizations, written forms, and author techniques. Inferential and critical comprehension skills are given increased emphasis at the upper levels.

The **Language Mechanics** tests measure capitalization and punctuation skills. Proofreading skills are measured in the context of passages presented in various formats. The **Language Expression** tests measure skills in using various parts of speech, forming and organizing sentences and paragraphs, identifying and developing topic sentences, and writing for clarity. In an objective, multiple-choice item format, these tests provide a clear focus on the skills that underlie effective written expression.

The **Spelling** tests measure application of rules for consonants, vowels, and various structural forms. Each item presents a sentence with the spelling word omitted. Answer choices include the correctly spelled word and three incorrect spellings representing common mistakes. This format provides a measure of spelling that is relatively independent of vocabulary and reading skills.

The **Computation** tests measure the operations of addition, subtraction, multiplication, and division. The test objectives are organized so that clear diagnostic information is provided for the specific skills that are subsumed within each operation. In the **Mathematics Concepts and Applications** tests, attention is given to the reasoning skills needed for practical problem solving.

Learning objectives for each of the content areas have been specified and are measured by groups of items at the appropriate levels. The description of the objectives and the items that measure each objective are listed in the **Test Coordinator's Handbook** and on the Individual Diagnostic Profiles. (This information is no longer printed on SCOREZE Answer Sheets.)

The **Norms Book** contains tables for converting Number Correct scores to Grade Equivalent scores, percentile ranks, Scale Scores, and Stanines. There are tables for both the Complete Battery and the Survey Form. GED prediction tables are also in the Norms Book.

The Grade Equivalent scores for TABE are derived from a calibration study done in January 1986, when over 8,000 adults took items from CAT E as well as items in the TABE. This study also provided reference group norms for persons who were identified by their teachers as being in one of the following groups: vocational-technical schools, adult basic education programs, adult offenders (in prisons), or youthful offenders (incarcerated).

All participants were asked to report 1985 edition GED scores so that GED scores can be predicted from TABE scores. The following list shows which score for TABE must be present to allow GED predictions to be produced. Predictions for the 1988 GED tests will be available in the fall of 1990.

Predicted GED Test	Predicting TABE Score
Reading	Total Reading
Mathematics	Total Mathematics
Writing	Total Language
Science	Total Reading
Social Studies	Total Reading
Average	Total Battery

TIME LIMITS

Test	Times (h:m) Locator Test	Complete Battery	Survey Form
Reading Vocabulary		:17	
Reading Comprehension		:37	
Total Reading	:14	:54	:22
Mathematics Computation		:43	
Mathematics Concepts and Applications		:37	
Total Mathematics	:23	1:20	:28
Language Mechanics		:15	
Language Expression		:41	
Total Language		:56	:21
Total Battery		3:10	1:11
Spelling		:13	

The time limits for the test sections are the same for each level; therefore, all levels can be administered in one room at the same time. The above times represent working time only. Additional time should be allowed for passing out materials and filling in names and identification on answer documents.

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Appendix D

Tests and Subtests of the TABE

Item	# Items	Time (Minutes)
Mathematics		
Computation	15	14
Concepts and Application	15	14
Reading		
Vocabulary	15	8
Comprehension	15	14
Language		
Mechanics (Punctuation)	15	7
Expression	15	14
Total Test	90	77

TABLE 6B
NUMBER-CORRECT SCORE TO TOTAL AREA SCALE SCORE & GRADE EQUIVALENT
SURVEY FORM
MATHEMATICS, LEVEL D

CONCEPTS & APPLICATIONS

NUMBER CORRECT SCORE	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	NUMBER CORRECT SCORE
0	603	603	603	609	646	655	662	668	673	678	683	689	694	699	707	733	0
	2.5	2.5	2.5	2.6	3.2	3.3	3.5	3.6	3.8	4.0	4.1	4.3	4.5	4.6	4.9	6.1	
1	603	603	603	609	646	655	662	668	673	678	683	689	694	699	707	733	1
	2.5	2.5	2.5	2.6	3.2	3.3	3.5	3.6	3.8	4.0	4.1	4.3	4.5	4.6	4.9	6.1	
2	603	603	603	609	646	655	662	668	673	678	683	689	694	699	707	733	2
	2.5	2.5	2.5	2.6	3.2	3.3	3.5	3.6	3.8	4.0	4.1	4.3	4.5	4.6	4.9	6.1	
3	624	624	624	630	667	676	683	689	694	699	704	710	715	720	728	754	3
	2.8	2.8	2.8	2.9	3.6	3.9	4.1	4.3	4.5	4.6	4.8	5.0	5.2	5.4	5.8	7.4	
4	643	643	643	649	686	695	702	708	713	718	723	729	734	739	747	773	4
	3.1	3.1	3.1	3.2	4.2	4.5	4.7	5.0	5.1	5.3	5.5	5.9	6.2	6.5	7.0	8.6	
5	652	652	652	658	695	704	711	717	722	727	732	738	743	748	756	782	5
	3.3	3.3	3.3	3.4	4.5	4.8	5.1	5.3	5.5	5.8	6.1	6.4	6.7	7.0	7.5	9.4	
6	658	658	658	665	701	711	717	723	729	734	739	744	749	755	763	788	6
	3.4	3.4	3.4	3.5	4.7	5.1	5.3	5.5	5.9	6.2	6.5	6.8	7.1	7.4	7.9	10.6	
7	664	664	664	670	707	716	723	729	734	739	744	750	755	760	768	794	7
	3.5	3.5	3.5	3.7	4.9	5.3	5.5	5.9	6.2	6.5	6.8	7.1	7.4	7.7	8.3	12.7	
8	669	669	669	675	712	721	728	734	739	744	749	755	760	765	773	799	8
	3.7	3.7	3.7	3.9	5.1	5.4	5.8	6.2	6.5	6.8	7.1	7.4	7.7	8.1	8.8	12.9	
9	674	674	674	680	717	726	733	739	744	749	754	760	765	770	778	804	9
	3.8	3.8	3.8	4.0	5.3	5.7	6.1	6.5	6.8	7.1	7.4	7.7	8.1	8.4	9.1	12.9	
10	679	679	679	686	722	732	738	744	750	755	760	765	770	776	784	809	10
	4.0	4.0	4.0	4.2	5.5	6.1	6.4	6.8	7.1	7.4	7.7	8.1	8.4	8.9	9.7	12.9	
11	685	685	685	691	728	737	744	750	755	760	765	771	776	781	789	815	11
	4.2	4.2	4.2	4.4	5.8	6.4	6.8	7.1	7.4	7.7	8.1	8.5	8.9	9.3	10.9	12.9	
12	691	691	691	697	734	743	750	756	761	766	771	777	782	787	795	821	12
	4.4	4.4	4.4	4.6	6.2	6.7	7.1	7.5	7.8	8.1	8.5	9.0	9.4	10.4	12.9	12.9	
13	698	698	698	704	741	750	757	763	768	773	778	784	789	794	802	828	13
	4.6	4.6	4.8	4.8	6.6	7.1	7.5	7.9	8.3	8.6	9.1	9.7	10.9	12.7	12.9	12.9	
14	706	706	706	713	749	759	765	771	777	782	787	792	797	803	811	836	14
	4.9	4.9	4.9	5.1	7.1	7.7	8.1	8.5	9.0	9.4	10.4	11.7	12.9	12.9	12.9	12.9	
15	733	733	733	739	776	785	792	798	803	808	813	819	826	829	842	863	15
	6.1	6.1	6.1	6.5	8.9	9.9	11.7	12.9	12.9	12.9	12.9	12.9	12.9	12.9	12.9	12.9	

COMPUTATION

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TABLE 65
NUMBER-CORRECT SCORE TO TOTAL AREA SCALE SCORE & GRADE EQUIVALENT
SURVEY FORM
READING, LEVEL D

NUMBER CORRECT SCORE		COMPREHENSION																NUMBER CORRECT SCORE	
		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15		
VOCABULARY	0	634 2.9	634 2.9	634 2.9	634 2.9	644 3.0	646 3.2	661 3.3	665 3.4	668 3.4	671 3.5	674 3.7	678 3.9	682 4.1	686 4.3	691 4.5	715 5.5	0	VOCABULARY
	1	634 2.9	634 2.9	634 2.9	634 2.9	644 3.0	656 3.2	661 3.3	665 3.4	668 3.4	671 3.5	674 3.7	678 3.9	682 4.1	686 4.3	691 4.5	715 5.5	1	
	2	634 2.9	634 2.9	634 2.9	634 2.9	644 3.0	656 3.2	661 3.3	665 3.4	668 3.4	671 3.5	674 3.7	678 3.9	682 4.1	686 4.3	691 4.5	715 5.5	2	
	3	634 2.9	634 2.9	634 2.9	634 2.9	644 3.0	656 3.2	661 3.3	665 3.4	668 3.4	671 3.5	674 3.7	678 3.9	682 4.1	686 4.3	691 4.5	715 5.5	3	
	4	661 3.3	661 3.3	661 3.3	661 3.3	672 3.6	683 4.1	689 4.4	693 4.6	696 4.7	699 4.9	702 5.0	705 5.1	709 5.3	714 5.5	719 5.7	742 7.3	4	
	5	673 3.6	673 3.6	673 3.6	673 3.6	683 4.1	695 4.7	700 4.9	704 5.1	707 5.2	710 5.3	713 5.4	717 5.6	721 5.9	725 6.1	730 6.4	754 8.2	5	
	6	681 4.0	681 4.0	681 4.0	681 4.0	692 4.6	703 5.0	709 5.3	713 5.4	716 5.6	719 5.7	722 5.9	725 6.1	729 6.3	734 6.6	739 7.0	762 9.0	6	
	7	688 4.4	688 4.4	688 4.4	688 4.4	699 4.9	710 5.3	716 5.6	720 5.8	723 6.0	726 6.1	729 6.3	732 6.5	736 6.8	741 7.2	746 7.6	769 9.8	7	
	8	694 4.7	694 4.7	694 4.7	694 4.7	705 5.1	716 5.6	722 5.9	726 6.1	729 6.3	732 6.5	735 6.7	738 6.9	742 7.3	747 7.7	752 8.1	775 10.9	8	
	9	700 4.9	700 4.9	700 4.9	700 4.9	710 5.3	722 5.9	727 6.2	731 6.4	734 6.6	737 6.9	740 7.1	744 7.4	748 7.8	752 8.1	757 8.5	781 12.5	9	
	10	705 5.1	705 5.1	705 5.1	705 5.1	716 5.6	727 6.2	733 6.5	737 6.9	740 7.1	743 7.4	746 7.6	749 7.8	753 8.2	758 8.6	763 9.0	786 12.9	10	
	11	710 5.3	710 5.3	710 5.3	710 5.3	721 5.9	732 6.5	738 6.9	742 7.3	745 7.5	748 7.8	751 8.0	754 8.2	758 8.6	763 9.0	768 9.6	791 12.9	11	
	12	715 5.5	715 5.5	715 5.5	715 5.5	726 6.1	737 6.9	741 7.4	747 7.7	750 7.9	753 8.2	756 8.4	759 8.7	763 9.0	768 9.6	773 10.6	796 12.9	12	
	13	722 5.9	722 5.9	722 5.9	722 5.9	732 6.5	744 7.4	749 7.8	753 8.2	756 8.4	759 8.7	762 9.0	766 9.3	770 10.0	774 10.8	779 11.7	803 12.9	13	
	14	731 6.4	731 6.4	731 6.4	731 6.4	742 7.3	753 8.2	759 8.7	763 9.0	766 9.3	769 9.8	772 10.4	775 10.9	779 11.7	784 12.9	789 12.9	812 12.9	14	
	15	750 7.9	750 7.9	750 7.9	750 7.9	761 8.9	772 10.4	778 11.4	782 12.9	785 12.9	788 12.9	791 12.9	794 12.9	798 12.9	803 12.9	808 12.9	831 12.9	15	

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TABLE 67
NUMBER-CORRECT SCORE TO TOTAL AREA SCALE SCORE & GRADE EQUIVALENT
SURVEY FORM
LANGUAGE, LEVEL D

NUMBER CORRECT SCORE		EXPRESSION																NUMBER CORRECT SCORE	
		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15		
MECHANICS	0	538 1.0	538 1.0	538 1.0	538 1.0	583 1.7	599 1.9	608 2.1	615 2.2	621 2.3	628 2.4	634 2.5	642 2.7	651 2.9	662 3.2	674 3.7	705 5.9	0	MECHANICS
	1	538 1.0	538 1.0	538 1.0	538 1.0	583 1.7	599 1.9	608 2.1	615 2.2	621 2.3	628 2.4	634 2.5	642 2.7	651 2.9	662 3.2	674 3.7	705 5.9	1	
	2	538 1.0	538 1.0	538 1.0	538 1.0	583 1.7	599 1.9	608 2.1	615 2.2	621 2.3	628 2.4	634 2.5	642 2.7	651 2.9	662 3.2	674 3.7	705 5.9	2	
	3	563 1.4	563 1.4	563 1.4	563 1.4	608 2.1	624 2.3	633 2.5	640 2.7	646 2.8	653 3.0	659 3.1	667 3.4	676 3.8	687 4.7	699 5.4	730 8.9	3	
	4	578 1.6	578 1.6	578 1.6	578 1.6	623 2.3	639 2.6	648 2.9	655 3.0	661 3.2	668 3.4	674 3.7	682 4.3	691 4.9	702 5.6	714 7.6	745 11.5	4	
	5	586 1.7	586 1.7	586 1.7	586 1.7	632 2.5	647 2.8	656 3.1	663 3.2	670 3.4	676 3.6	683 4.4	691 4.9	700 5.5	710 6.4	723 8.2	754 12.9	5	
	6	593 1.9	593 1.9	593 1.9	593 1.9	638 2.6	654 3.0	663 3.2	670 3.4	676 3.8	683 4.4	689 4.8	697 5.3	706 6.0	717 7.8	729 8.8	760 12.9	6	
	7	599 1.9	599 1.9	599 1.9	599 1.9	644 2.8	660 3.2	669 3.4	676 3.8	682 4.3	689 4.8	695 5.2	703 5.7	712 7.1	723 8.2	735 9.5	766 12.9	7	
	8	604 2.0	604 2.0	604 2.0	604 2.0	650 2.9	665 3.3	674 3.7	681 4.2	688 4.7	694 5.1	701 5.5	709 6.3	718 7.9	728 8.7	741 10.2	772 12.9	8	
	9	609 2.1	609 2.1	609 2.1	609 2.1	655 3.0	670 3.4	679 4.1	686 4.6	693 5.0	699 5.4	706 6.0	714 7.6	723 8.2	733 9.2	746 11.8	777 12.9	9	
	10	615 2.2	615 2.2	615 2.2	615 2.2	660 3.2	676 3.8	685 4.5	692 5.0	698 5.3	705 5.9	711 6.7	719 7.9	728 8.7	739 10.0	751 12.9	782 12.9	10	
	11	620 2.3	620 2.3	620 2.3	620 2.3	665 3.3	681 4.2	690 4.8	697 5.3	703 5.7	710 6.4	718 7.7	724 8.3	733 9.2	744 11.1	756 12.9	787 12.9	11	
	12	625 2.4	625 2.4	625 2.4	625 2.4	670 3.4	686 4.6	695 5.2	702 5.6	708 6.2	715 7.6	721 8.1	729 8.8	738 9.9	749 12.5	761 12.9	792 12.9	12	
	13	632 2.5	632 2.5	632 2.5	632 2.5	677 3.9	693 5.0	702 5.6	709 6.3	715 7.6	722 8.2	728 8.7	736 9.6	745 11.5	756 12.9	768 12.9	799 12.9	13	
	14	642 2.7	642 2.7	642 2.7	642 2.7	688 4.7	703 5.7	712 7.1	719 7.9	726 8.5	732 9.1	739 10.0	747 12.0	756 12.9	766 12.9	779 12.9	810 12.9	14	
	15	661 3.2	661 3.2	661 3.2	661 3.2	707 6.1	722 8.2	731 9.0	738 9.9	745 11.5	751 12.9	758 12.9	766 12.9	775 12.9	785 12.9	798 12.9	829 12.9	15	

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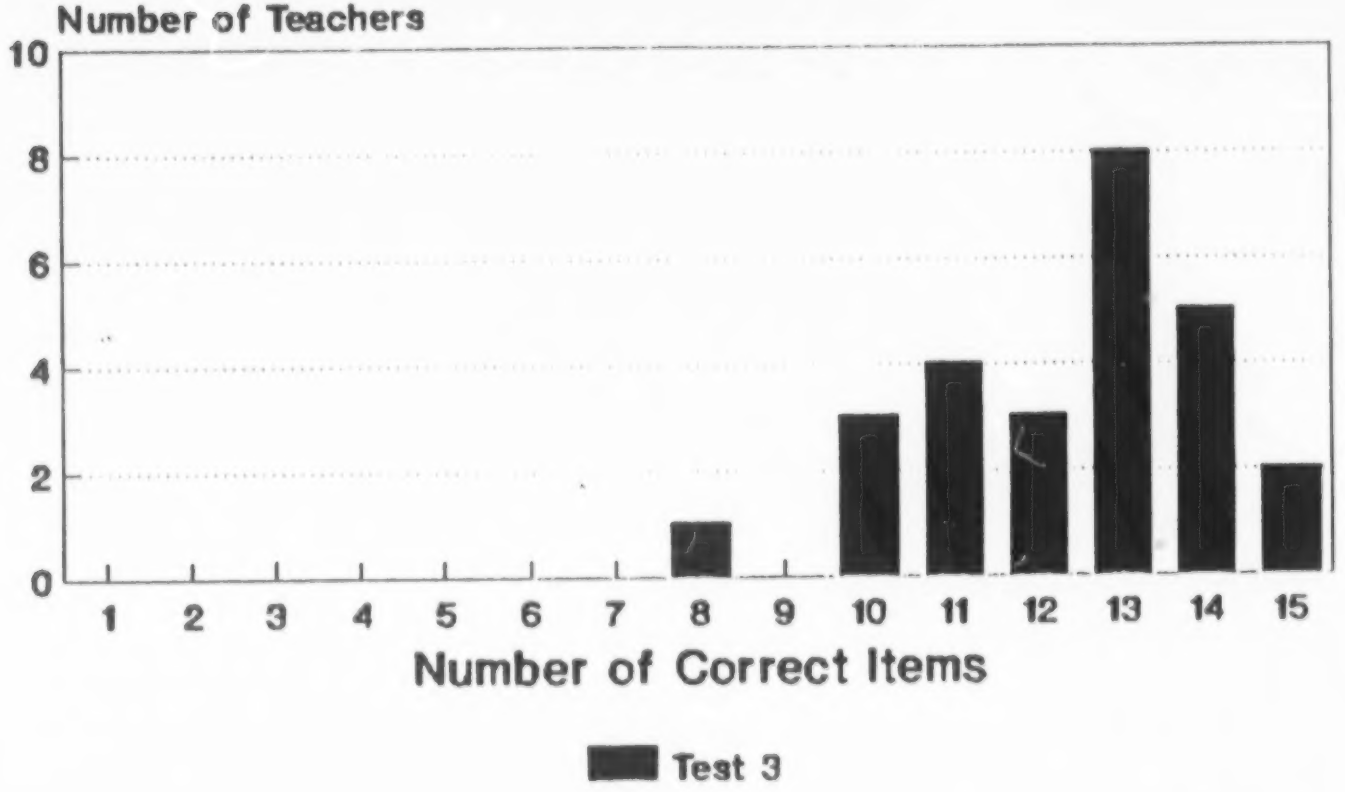
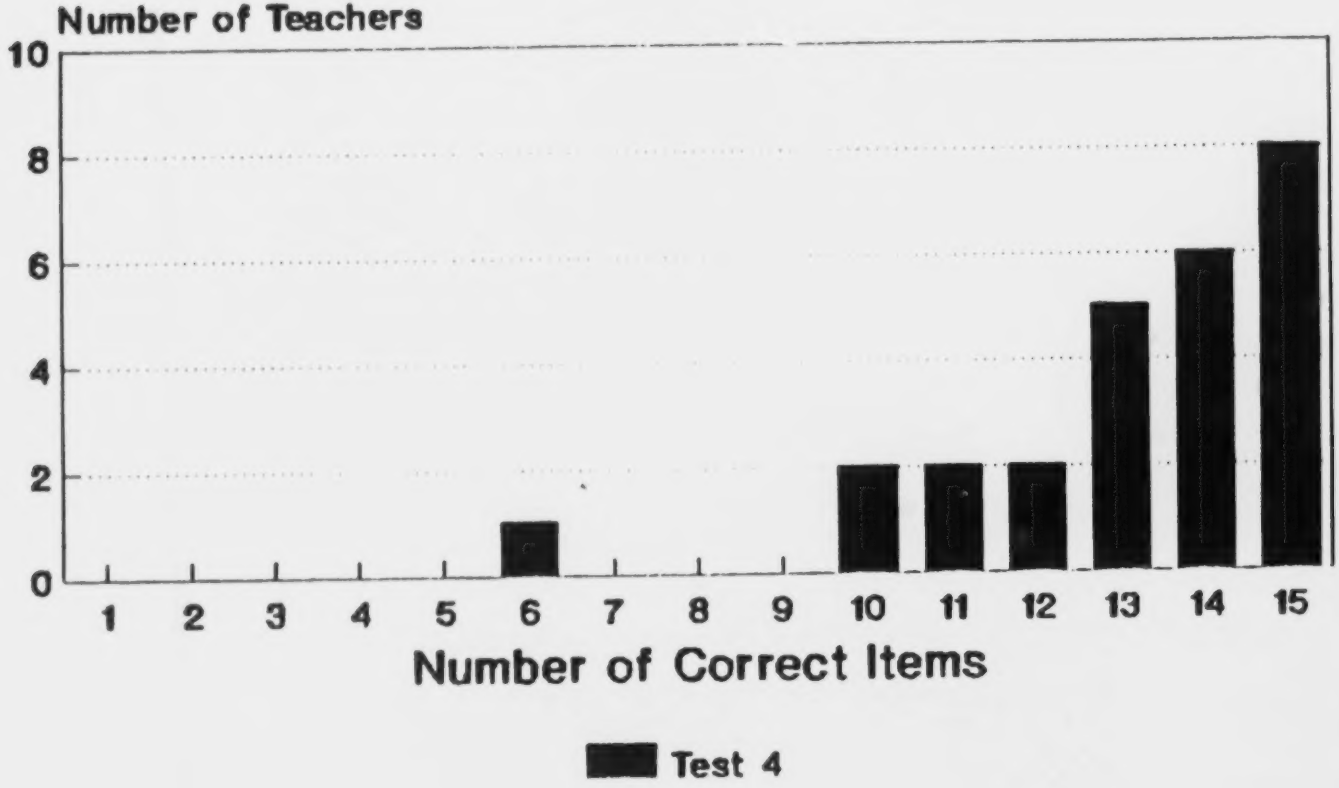
TABE Survey Form D, 1990
Test 3, Mathematics Computation



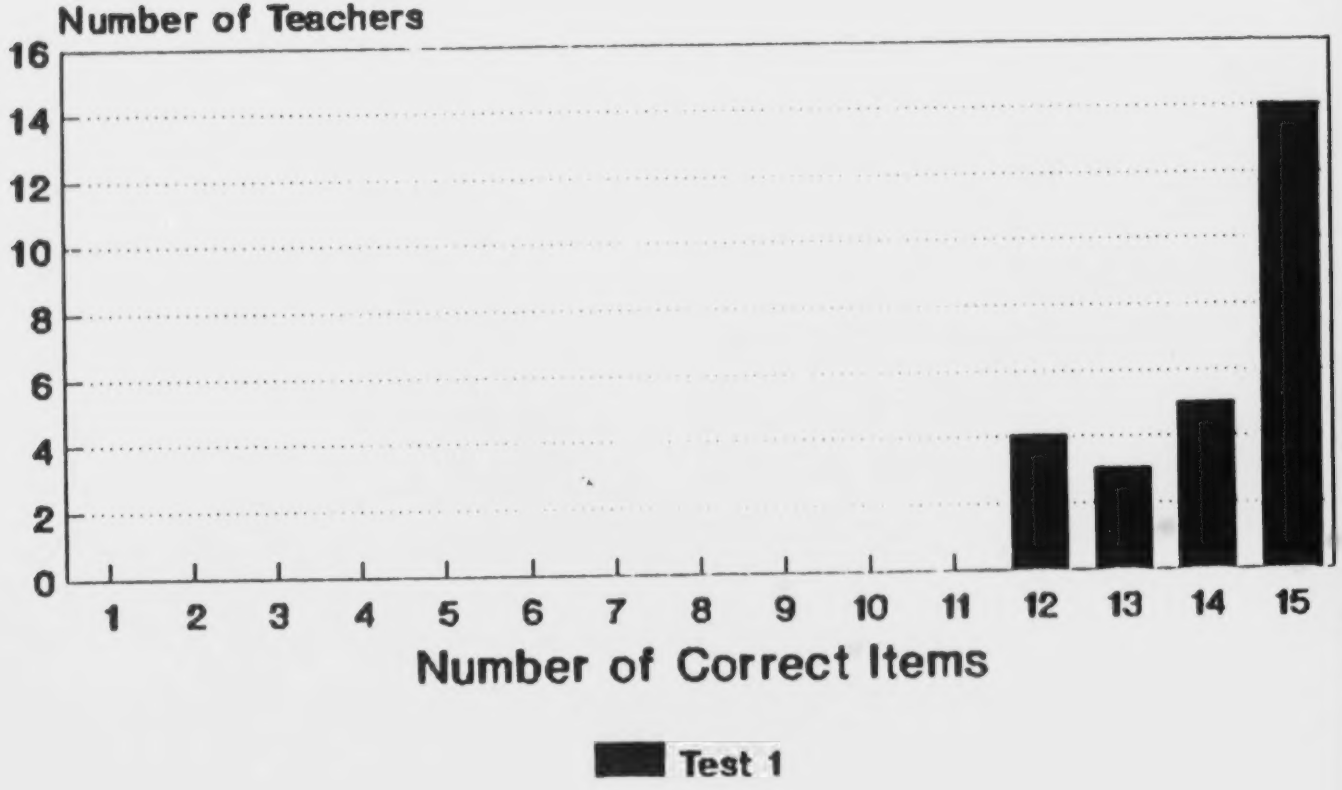
Test Scores (Possible High = 15)

TABE Survey Form D, 1990
Test 4, Math Concepts & Applications



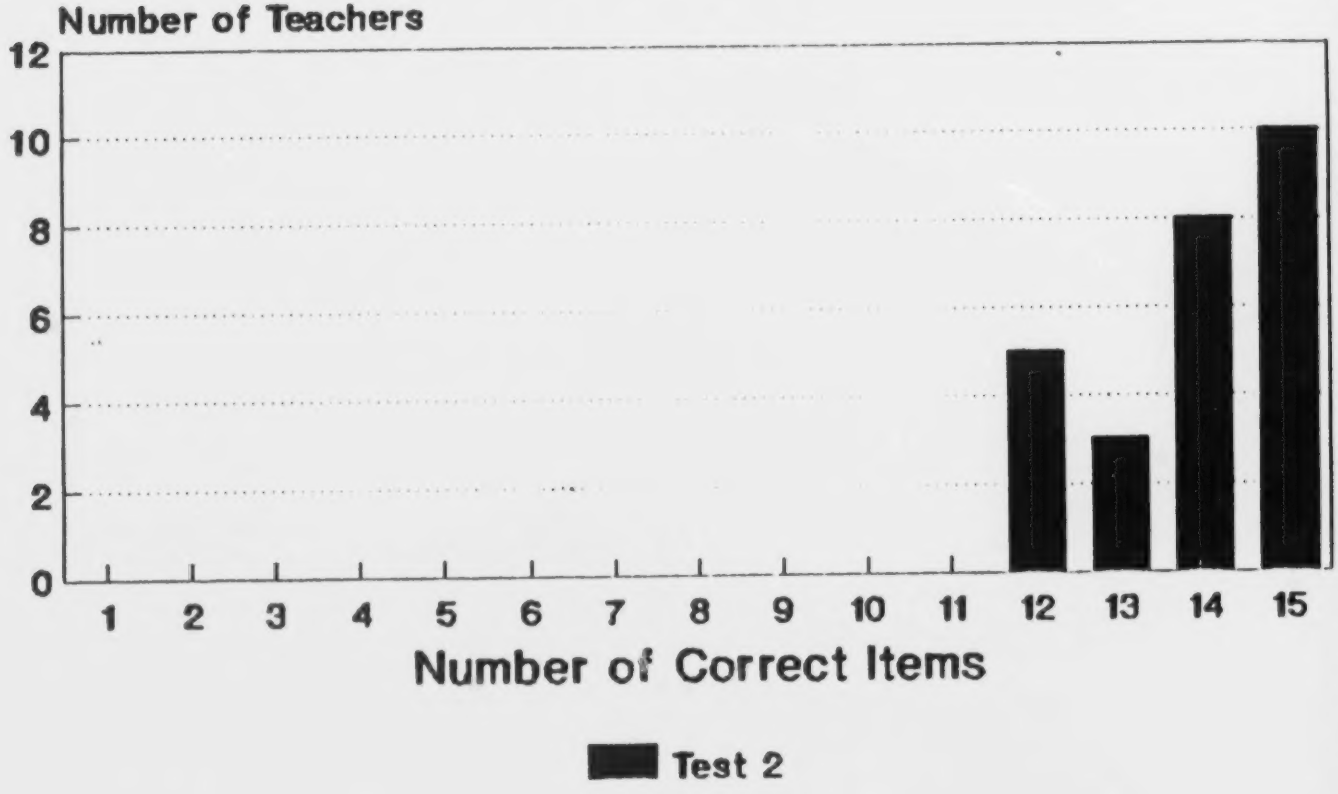
Test Scores (Possible High = 15)

TABE Survey Form D, 1990
Test 1, Vocabulary



Test Scores (Possible High - 15)

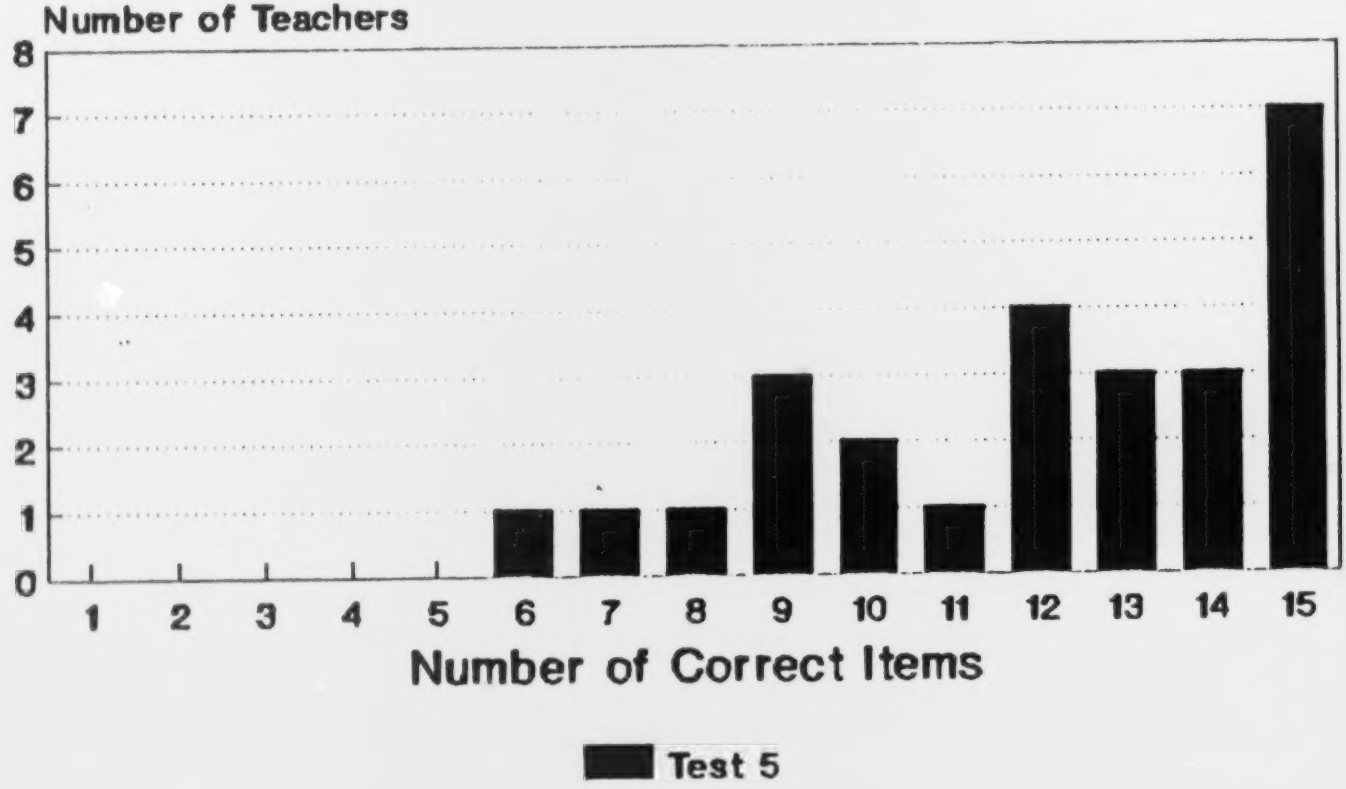
TABE Survey Form D, 1990
Test 2, Comprehenson



Test Scores (Possible High - 15)

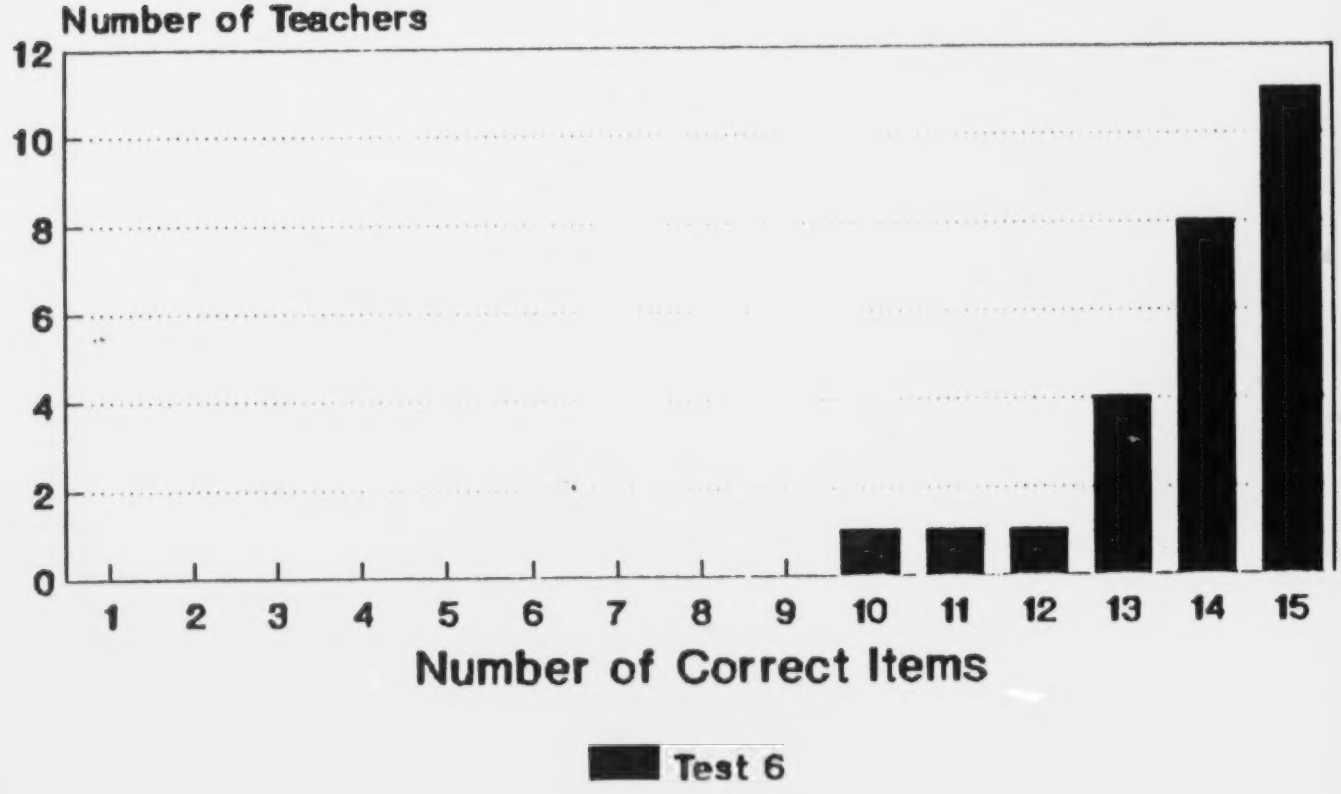
TABE Survey Form D, 1990

Test 5, Language Mechanics



Test Scores (Possible High - 15)

TABE Survey Form D, 1990
Test 6, Language Expression



Test Scores (Possible High - 15)

Appendix G

Cost Study

A Typical Operational Year Based on the Optimal Number of Sites and 50 Examinees[a]

Basic System

Test Services		
Distant Sites (full days @ 200/day) X 7 sites $200 X 7		$1,400.00
Local Sites (half days @ 100/day) X 3 sites $100 X 3		$ 300.00
Training/Orientation (half days @ 100/day) 4 examiners $100 X 4		$ 400.00
Coordination Services		
Professional		
Develop individual reports, verify scores, write correspondence, telephone contacts, and develop annual report for IDOE (5 days @ $200/day)		$1,000.00
Support		
Test security (required by vendor), material storage, record system, and mailing services (5 days @ $78/day)		$ 390.00
Travel		
(Rate @ 25 cents/mile)		
Ball State Examiner (380 miles)	$ 95.00	
Indiana State Examiner (358 miles)	$ 89.50	
Indiana Examiner (386 miles)	$ 96.50	
Purdue Examiner (560 miles)	$140.00	$ 421.00
Supplies and Materials		
Test booklets @ $1.62 each (50 units)[b]		$ 81.00
Scoreze @ .57/each (50 units)		$ 28.50
Handbooks @ .64/book (50 books)		$ 32.00
Miscellaneous supplies		$ 50.00

Postage

Test booklet distribution to/from examiners (2 way) @ 4.80 X 3[c]	$ 14.40
Announcement/handbook 50 @ .80/piece[d]	$ 40.00
Results: Examinees 50 @ .30/piece	$ 15.00
Results: PDP Committee 53 @ .30/piece	$ 15.90
Miscellaneous correspondence 30 @ .30/piece	$ 9.00
TOTAL	$4,195.90

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[a] An increase of decrease in the number of examinees by 20 would have only a marginal effect of ± $87.94. This number would not substantially change the testing or coordination services.

[b] A three year supply of test booklets and scoreze can be carried over from the planning grant.

[c] Anticipates new postal rates, "Priority Classification."

[d] Anticipates new postal rates, .30/1st ounce and .25 each additional ounce.

Cost Study

Retest Option for Twenty Percent
of the First Year Teachers (N = 10)

Testing Services	
One distant site (full day @ $200/day)	$200.00
Coordination Services	
Professional (full day equivalent @ $200/day)	$200.00
Support (full day equivalent @ $78/day)	$ 78.00
Travel	
Mileage (est. 70 miles @ .25/mile)	$ 17.50
Supplies	
Test booklet @ 1.62/each	$ 16.20
Scoreze @ 1.71/each	$ 17.10
Postage	
Announcement	$ 3.00
Results: Examinees	$ 3.00
Results: PDP Committee	$ 3.00
TOTAL	$537.80